Reports from London—Further concerning the case of plague at Cardiff.

LONDON, ENGLAND, *February 9, 1901.*

SIR: Confirming my cablegram of the 8th instant, I have the honor to give the following account of the case of plague at Cardiff. The victim was employed in a flour mill and had been gathering up dead rats and carrying them to the furnace. January 27 he was taken ill and died February 1, and the diagnosis of plague was confirmed bacteriologically. One other suspicious case has not been definitely determined, but probably was a simple infection. It would seem that the rats were infected in Cardiff before the case quoted above, but the source is unknown, being probably from some vessel from an infected port.

There is no further devolopment in the plague situation at Hull. One further member of the crew has died, the physician is convalescent, and the vessel, after discharging her cargo of cotton seed into lighters, was thoroughly disinfected and allowed to come to dock.

The smallpox continues to spread in Glasgow, and there are now more than 450 cases in hospital.

Two cases of plague are reported from Cape Town. At both Cape Town and Cardiff, efforts are being made to exterminate the rats by offering a reward for each dead rat.

Respectfully,

A. R. THOMAS,
Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

No new plague cases in Cardiff.

LONDON, ENGLAND, *February 16, 1901.*

SIR: I have the honor to make the following report regarding the health of Great Britain: There have been no fresh outbreaks of quarantinable diseases. The smallpox epidemic in Glasgow seems to be slowly decreasing, there being now about 400 cases in hospital. There have been no further cases of plague in Cardiff. There have been recently a considerable number of cases of typhus fever in Manchester, the majority of which can be traced to cases of infection occurring in the employees of a rag establishment. They were, however, engaged in handling only new cuttings, and all those infected were handling woolen rags.

Respectfully,

A. R. THOMAS,
Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

FRANCE.

Report on some French disinfecting apparatus, exhibited at the Paris Exposition, 1900.

[By Asst. Surg. S. B. Grubbs.]

In Class III of the Paris Exposition there are 4 exhibitors of disinfecting apparatus. While presenting no new principles, a cursory sketch of same and the circular herewith inclosed may be of interest to the Bureau.

J. Le Blanc, 52 Rue de Rendezvous, Paris, is an extensive manu-

facturer of all sanitary apparatus. He has exhibited many forms of steam chambers, stationary and portable, water boilers and pulverizers for disinfecting liquids, one of each type in the inclosed circular (Exhibit A) being shown. The principle of all these steam chambers is the same. They use only live steam and that always flowing and under pressure (8 to 10 pounds), this being accomplished by allowing the steam to enter at the top and escape after required pressure is obtained from a smaller outlet at the bottom. Another point emphasized by this firm is the simplicity of their machines, as, after steam is turned on, all manipulations can be made with one handle which regulates the inlet and escape of the steam in the proper ratio. These machines have no vacuum-producing contrivance, but a small jet of steam can be projected into the large escape pipe (on the principle of forced draught) which will cause the air to circulate in the chamber, entering the opening at the bottom. This is the style of chamber used at Havre on the French line docks.

Combined washing and disinfecting machine.

Fernand Dehaitre, 6 Rue d'Oran, Paris, exhibits several patterns of disinfecting apparatus (Exhibit B), but calls particular attention to his combined washing and disinfecting machine for soiled and stained linen of hospitals and similar establishments. That this machine accomplishes what it claims is very likely, but that it is rather complicated is also evident. As will be seen from the cut, it is a jacketed steam chamber with a perforated cylinder inside that can be revolved at will. The linen is put in this inner cylinder and it is closed, the whole is partly filled with cold water and left, the inner drum being occasionally turned, for at least an hour. This is to remove spots of blood, pus, etc. This water is thus drawn off into a special closed tank and sterilized by heating to boiling by a steam coil before being evacuated. Next the washing fluid (Lessive) is run in and slowly heated by means of the steam jacket (the drum kept revolving). After this the linen is rinsed by running in cold water and next live steam is introduced to disinfect. The entire process should occupy six hours, and it seems should do what is claimed, namely, "Absolute sterilization and complete washing of soiled and contaminated linen without fixing of stains and without any manipulation."

Formacétone in a heated chamber.

The third process, exhibited by M. Eugène Fournier, is a slight departure, employing "formacétone" gas in a heated chamber.

As this process did not seem entirely clear, either from the exhibit or the brochure on the subject, I saw M. Fournier at his offices where he showed me all his appliances. This "formacétone," it seems, is not formic acetone or formic aldehyde, as one would suppose, but a combination of formaldehyd and acetone for which he claims increased penetrating and increased insecticidal powers. When asked the proportions M. Fournier stated that the exact composition of his liquids was patented.

The disinfecting chamber of this system is simply an airtight box of wood and heavy paper. Outside is an autoclave surrounded by a drum. This is connected with the interior by a large pipe from the drum for dry heat, and by a small pipe for the disinfecting gas. (See illustration, pp. 26, 27, Exhibit C.)

By this apparatus a temperature of 85° C. is obtained, and an exposure of one hour to the gas at this temperature sterilized completely.

I am aware that this is similar to the experiments made by Passed Assistant Surgeons Rosenau and Sprague some years ago with formaldehyd gas in the Kinyoun-Francis apparatus, but here the same results are claimed without the use of the partial vacuum. M. Fournier has also an autoclave with an "omnibus" door, that will replace any door, by means of which he can raise the temperature of an ordinary room to 40 or 42°, and with the gas completely disinfect in six hours.

As will be seen from the illustrations on pages 13 and 15, this apparatus appears rather complicated, especially as a fan or turbine (operated also from without) is required to circulate the heated air and gas.

Bactericidal power of formacétone.

As to the details of the bactericidal powers of this process no official tests of its powers to disinfect habitations have been made as yet with the approved apparatus—*i. e.*, furnishing the added element of heat. However, the same process without heat was tested by Drs. Du Bois, St. Servin, and Bonnefoy, of the French navy, at the laboratory of bacteriology of the naval hospital of Lorient, and a report of the same appeared in the December, 1899, number of the "Archives de Medicine Navale." In these tests the solution used consisted of acetone, two-fifths, 40 per cent; formaldehyd, three-fifths. The walls were sponged with a 2 per cent solution of same and the floor sprinkled with a 50 per cent solution before beginning. Then an injection was made of pure acetone gas and afterwards with the "formacétone" gas and the rooms left closed for from thirty-six to forty hours. The conclusions drawn were that the process was "efficacious but not absolute," that a certain degree of penetration through a cloth and paper was shown. Excepting this, however, the results correspond in general to those obtained from formaldehyd, while on the other hand it deals with a dangerous explosive gas.

M. Fournier tells me that a new test will soon be made before a committee of the academy of sciences, and that a copy of the report will be furnished me.

The fourth exhibitor of disinfecting apparatus mentioned shows principally smaller appliances that would probably not be of special interest to the Bureau.

Review of the French literature on disinfection by formic aldehyde.

[By Asst. Surg. S. B. Grubbs.]

The actual condition of disinfection by formaldehyd gas in France is that of a deadlock—that is, the chemists and bacteriologists interested in the process, and many disinterested ones, have made numerous experiments and shown results from which they claim that the gas used by what is known here as the "procèdé Trillat" supplies easy, cheap, quick, and harmless surface disinfection.

The majority of scientists in official stations, on the other hand, claim that the gas is not efficacious; that the process is complicated and presents no improvement over the one now used by the municipal disinfection service, viz, spraying with a solution of bichloride of mercury.

Probably on account of this deadlock the literature on this subject has not been extensive since the publication in 1896 of M. Trillat's book "La Formaldéhyde." A glance at several articles, however, showing both sides of the question, may be of interest.

First, a short report entitled "*Experiments on disinfection by the vapors of formaldehyd.*" Made at Lille by M. Trillat.

After mentioning the method formerly used, namely, the generation